REMARKS

Reconsideration of this application is respectfully requested.

This application has been reviewed in light of the Office Action dated June 10, 2005.

In the Office Action, the Examiner has again rejected Claims 14-16 and 19 under 35 U.S.C. § 103(a) as being unpatentable over *Yoon et al.* (U.S. 6,208,147), hereinafter referred to as *Yoon I,* in view of *Bluemel et al.* (U.S. 2004/0021448), Claim 17 under 35 U.S.C. § 103(a) as being unpatentable over *Yoon I* in view of *Bluemel*, and further in view of *Yoon et al.* (U.S. 6,160,382), hereinafter referred to as *Yoon II*, Claim 18 under 35 U.S.C. § 103(a) as being unpatentable over *Yoon I* in view of *Bluemel*, and further in view of *Oyama* (U.S. 2003/0082458), Claims 20-22 and 25 under 35 U.S.C. § 103(a) as being unpatentable over *Yoon I* in view of *Yamin* (U.S. 5,998,052), Claim 23 under 35 U.S.C. § 103(a) as being unpatentable over *Yoon I* in view of *Yamin*, and further in view of *Yoon II*, and Claim 24 under 35 U.S.C. § 103(a) as being unpatentable over *Yoon I* in view of *Yamin*, and further in view of *Oyama.*

With regard to the rejection of independent Claims 14 and 20, in both rejections, the Examiner asserts that *Yoon I* teaches all the recitations of these claims, except for teaching a partial charge having at least 60% with a voltage less than a full charge or teaching a partial discharge having at least 10% with a voltage less than a full charge, which the Examiner asserts are taught in *Bluemel* and *Yamin*, respectively. However, it is respectfully submitted that the Examiner is incorrect.

Among other things, Claims 14 and 20 recite (c) determining specific internal resistance components from an equivalent circuit model fitted from the measured impedance spectrum to perform a numerical operation, and (d) comparing the numerical operation value of the resistance components with an initial discharge capacity graph of the batteries to evaluate an initial discharge capacity of unknown batteries of the same

group. The Examiner cites FIGs. 4 and 9, column 6, lines 61-65, and column 7, lines 35-43, of *Yoon I* as teaching the recitations of step (c). Further, the Examiner cites the Abstract, lines 1-13, column 2, lines 35-58, column 6, line 61 to column 7, line 56 as teaching the recitations of step (d). However, as previously argued, it is respectfully submitted that no disclosure of steps (c) and (d) in the cited sections or any other section of *Yoon I.*

More specifically, *Yoon I* determines the capacity of a battery by comparing a model parameter predefined according to an impedance function approximation algorithm with the capacity of the battery measured by the real time discharge method. The present invention, however, as recited in independent Claims 14 and 20, evaluates the discharge capacity of batteries of a same group according to the initial discharge capacity by comparing the resistance (Rser) and the charge transfer resistance (Rct), determined from the impedance spectrum, with the initial discharge capacity graph, not by comparing a model parameter predefined according to an impedance function approximation algorithm with the capacity of the battery measured by the real time discharge method, recited in *Yoon I.*

Further, in the Response to Arguments section of the Office Action, the Examiner again cites column 7, lines 35-43 of *Yoon I* as teaching "comparing the numerical operation value of the resistance components with an initial discharge capacity graph of the batteries to evaluate an initial discharge capacity of unknown batteries of the same group." This cited section, which describes FIG. 9 of *Yoon I*, reads as follows:

> To compare the remaining capacity of battery and the numerical value derived from the frequency dependence of real or imaginary part of the internal impedance of battery, obtained or extrapolated from relatively narrow frequency range, instead of calculating model parameters for the impedance spectrum measured in Embodiment 2, the relationship is examined between the imaginary value of impedance in the lower frequency region and the square root of the frequency. As a result, no close correlation is found between the absolute value and the remaining capacity, as illustrated in FIG. 9.

As indicated above, no part of this section teaches comparing the numerical operation value of the resistance components Rser and Rct with an initial discharge capacity graph of measured battery samples, as is shown in FIGs. 8-12 of the present application, and recited in Claims 14 and 20. Further, this section is directed to the comparison of the impedance value and the frequency as shown in FIG. 9 of *Yoon I.*

Additionally, with regard to the Examiner citing *Bluemel* and *Yamin* as teaching a partial charge having at least 60% with a voltage less than a full charge and teaching a partial discharge having at least 10% with a voltage less than a full charge, respectively, while these reference do show charging or discharging a battery to the claimed charge states, these references do not perform these charge states for the same reason as in the present invention. Therefore, one skilled in the art would not look to either *Bluemel* or *Yamin* to combine these references with *Yoon I.* For example, *Yamin* teaches a partial discharge having at least 10% with a voltage less than a full charge merely because the batteries will be less hazardous.

Further, as indicated on page 5, lines 18-25 of the present application, if the capacity correlation graph is prepared for a battery group according to the present invention, the batteries of the same group can be easily and economically compared with the graph and selected based on their specific initial capacity, without using a real-time discharge method. That is, the present invention provides an optimum condition. However, the Examiner's cited references teach selecting batteries having a specific remaining capacity, not a specific initial capacity.

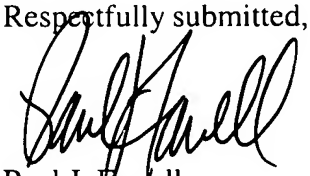
Moreover, sing the present invention, battery pack manufactures supplied with batteries in a specific state of charge or discharge can acquire accurate information for evaluation of the battery capacity through analysis of the impedance spectrum only, thereby being able to enhance the energy efficiency of the battery pack.

Accordingly, at least for the reasons given above, it is respectfully submitted that the Examiner is incorrect in rejecting Claims 14 and 20, and it is respectfully requested that the rejections be withdrawn.

Without considering the patentability of dependent Claims 15-19 and 21-25, it is respectfully submitted that these claims are in condition for allowance, as being dependent upon independent Claims 14 and 20, respectively. Accordingly, it is respectfully requested that the rejections of dependent Claims 15-19 and 21-25 be withdrawn.

Accordingly, all of the claims pending in the Application, namely, Claims 14-25, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,



Paul J. Farrell
Reg. No. 33,494
Attorney for Applicant(s)

DILWORTH & BARRESE, LLP
333 Earle Ovington Blvd.
Uniondale, New York 11553
Tel: (516) 228-8484
Fax: (516) 228-8516

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